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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,195	12/05/2001	Mitsuhiro Kitagawa	A329-1	2353
21254	7590	09/16/2005	EXAMINER	
MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			ABELSON, RONALD B	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

✓

Office Action Summary	Application No. 10/002,195	Applicant(s) KITAGAWA, MITSUHIRO	
	Examiner Ronald Abelson	Art Unit 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2002 and 05 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-15 is/are rejected.
- 7) ☒ Claim(s) 8 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/7/02 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07 February 2002</u> . | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9 and 11 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azizoglu (US 6,430,201) in view of in view of Meagher (US 2005/0141569).

Regarding claim 9, Azizoglu teaches receiving a plurality of data traffics (fig. 2: see outputs of boxes 22-1 and 22-2 sent to box 26, col. 4 lines 55-62).

Azizoglu teaches mapping each of the data traffics into SONET/SDH frames (fig. 2 box 26, multiplexes the streams together, maps the multiplexed streams into the OC-48 signal, col. 4 lines 57-62, if buffers are non-empty, packets are selected in an alternating manner, col. 5 lines 6-9).

Azizoglu teaches transmitting the SONET/SDH frames through a SONET/SDH network (fig. 2 box 26, multiplexes the streams together, maps the multiplexed streams into the OC-48 signal, col. 4 lines 57-62).

Azizoglu is silent on a mapping / multiplexing the SONET/SDH frames into a multi-frame by a number equal to or greater than the number of data traffics.

Meagher teaches mapping / multiplexing the SONET/SDH frames into a multi-frame (figs. 4-6, four OC-48 signals may be multiplexed into an OC-192 aggregate, [0048]). The examiner corresponds the applicant's SONET/SDH frames with Meagher's OC-48 signals and the applicant's multi-frame with Meagher's OC-192 signal. Regarding the limitation by the number equal to or greater than the number of said data traffics, Azizoglu teaches two data traffics and Meagher teaches four 'SONET/SDH' / OC-48 frames being multiplexes into one OC-192 frame.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Azizoglu by incorporating the multiplexer of Meagher within the Mux/Demux of Azizoglu. This modification can be performed according to the teachings of Meagher. The suggestion for the modification is to provide a time division multiplexer/demultiplexer that transmits low rate data using a high rate aggregate connection (Meagher [0008]). This would benefit the system by allowing data to be transmitted at OC-192 as opposed to the slower OC-48 rate taught by Azizoglu.

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Regarding claim 11, the mapper inserts an identifier for identifying each of data traffics, into a head in each of the SONET/SDH frames (stream identifier in each transmitted packet (Azizoglu: col. 5 lines 18-21, separates packets belonging to different streams using address byte in packet headers, col. 6 lines 10-12)).

Regarding claim 12, identifying the data traffics, based on the identifier, for reproducing each of the data traffics (Azizoglu: fig. 4 box 64, separates packets belonging to different streams using the address byte, col. 6 lines 10-14)).

Regarding claim 13, inserting error-monitoring data for monitoring a transmission error in each of data traffics, into a head in each of said SONET/SDH frames (Azizoglu: fig. 6 box 80, FEC encoder col. 6 lines 47-54). Regarding error-monitoring data placed in the head of the Sonet/SDH frame, the Sonet format calls for non-payload information being placed in the head of the frame (Newton: pg. 699-670, see figure on pg. 699).

Regarding claim 14, judging whether there is a transmission error in each of said data traffics, based on said error-

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monitoring data (Azizoglu: fig. 6 box 82, FEC decoder col. 6 lines 47-54).

3. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Azizoglu and Meagher as applied to claim 9 above, in view of Azizoglu (fig. 4) and further in view of Meagher.

Regarding claim 10, in addition to the limitations previously addressed, the combination teaches outputting the data traffics externally (Azizoglu: fig. 2: see output from box 26 to boxes 22-1 & 22-2).

Although the combination teaches a demultiplexer (Azizoglu: fig. 2 box 26: Asynchronous Demultiplexer) that receives SONET/SDH frames and transmits the demultiplexed data (fig. 2 see lines representing data transmitted from the Asynchronous Demux to the codecs), the combination does not explicitly teach a demapper/demultiplexer which extracts each of the data traffics out of each of the SONET/SDH.

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Azizoglu (fig. 4) explicitly teaches a demapper which receives SONET/SDH and extracts each of the data traffics out of each of the SONET/SDH frames (fig. 4 box 64, separates packets belonging to different streams using the address byte, col. 6 lines 10-14).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Azizoglu (fig. 2) and Meagher by incorporating the de-interleaver of Azizoglu (fig. 4 box 64) within the demultiplexer of the combination (Azizoglu: fig. 2 box 26). This modification can be performed according to the teachings of Azizoglu (fig. 4). The suggestion for the modification is to separate packets belonging to different streams (col. 6 lines 10-14). This would benefit the system by enabling data to be transmitted from one of the GbE sources (Azizoglu: fig. 2) to the OC-48 network and enabling the OC-48 network to respond to the said one GbE source.

The combination is silent on detecting a multi-frame out of the SONET/SDH frames received through the SONET/SDH network and extracting the SONET/SDH frames.

Meagher teaches detecting a multi-frame out of the SONET/SDH frames received through the SONET/SDH network and

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extracting the SONET/SDH frames (demultiplexer that accepts the high-speed aggregate and de-interleaves, [0045]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by incorporating the demultiplexer of Meagher within the Mux/Demux of the combination (Azizoglu: fig. 2 box 26). This modification can be performed according to the teachings of Meagher. The suggestion for the modification is to provide a time division multiplexer/demultiplexer that transmits low rate data using a high rate aggregate connection (Meagher [0008]). This would benefit the system by allowing data to be transmitted at OC-192 as opposed to the slower OC-48 rate.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Azizoglu and Meagher as applied to claim 13 above, and further in view of Bordogna (US 6,683,855).

Although the combination teaches error-monitoring data (Azizoglu: FEC encoder, FEC decoder, col. 6 lines 47-54), the combination is silent on error monitoring data is produced in accordance with BIP-8.

Bordogna teaches error monitoring data is produced in accordance with BIP-8 (FEC BIP-8, col. 11 lines 20-25).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Azizoglu and Meagher by using FEC BIP-8. This modification can be performed according to the teachings of Bordogna. This modification would benefit the system since BIP-8 is used often in the SONET environment. Therefore, the system could be easily incorporated into larger systems.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azizoglu (US 6,430,201) in view of Azizoglu and further in view of Meagher (US 2005/0141569).

Regarding claim 1, Azizoglu (fig. 2) teaches a first interface through which a plurality of data traffics is input and output (fig. 2: box 26: see interfaces on left, col. 4 lines 55-62).

Azizoglu teaches a second interface through which a SONET/SDH frame is received from a SONET/SDH network (fig. 2: see OC-48 input to box 26) and through which a SONET/SDH frame produced by multiplexing said data traffics is output to the

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SONET/SDH network (fig. 2 box 26, col. 4 lines 38-39, col. 4 lines 55-62).

Azizoglu teaches a mapper / multiplexer which receives said data traffics through the first interface, maps each of the data traffics into SONET/SDH, and transmits the SONET/SDH to the SONET/SDH network through the second interface (fig. 2 box 26, multiplexes the streams together, maps the multiplexed streams into the OC-48 signal, col. 4 lines 57-62, if buffers are non-empty, packets are selected in an alternating manner, col. 5 lines 6-9).

Although Azizoglu (fig. 2) teaches a demultiplexer (fig. 2 box 26: Asynchronous Demultiplexer) that receives SONET/SDH frames from the second interface through the SONET/SDH network (fig. 2 OC-48) and transmits the demultiplexed data through the first interface (fig. 2 see lines representing data transmitted from the Asynchronous Demux to the codecs), Azizoglu (fig. 2) does not explicitly teach a demapper/demultiplexer which extracts each of the data traffics out of each of the SONET/SDH frames and transmits the extracted data traffics through the first interface.

Azizoglu (fig. 4) explicitly teaches a demapper/de-interleaver which receives SONET/SDH and extracts each of the

data traffics out of each of the SONET/SDH frames (fig. 4 box 64, separates packets belonging to different streams using the address byte, col. 6 lines 10-14).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Azizoglu (fig. 2) by incorporating the de-interleaver of Azizoglu (fig. 4 box 64) within the demultiplexer of Azizoglu (fig. 2 box 26). This modification can be performed according to the teachings of Azizoglu (fig. 4). The suggestion for the modification is to separate packets belonging to different streams (Azizoglu: col. 6 lines 10-14). This would benefit the system by enabling data to be transmitted from one of the GbE sources (Azizoglu: fig. 2) to the OC-48 network and enabling the OC-48 network to respond to the said one GbE source.

Note, for the remainder of this office action, the examiner will refer to the combination of Azizoglu fig. 2 and Azizoglu fig. 4 as Azizoglu.

Azizoglu is silent on a mapping / multiplexing the SONET/SDH frames into a multi-frame by a number equal to or greater than the number of data traffics.

Meagher teaches mapping / multiplexing the SONET/SDH frames into a multi-frame (figs. 4-6, four OC-48 signals may be multiplexed into an OC-192 aggregate, [0048])). The examiner corresponds the applicant's SONET/SDH frames with Meagher's OC-48 signals and the applicant's multi-frame with Meagher's OC-192 signal. Regarding the limitation by the number equal to or greater than the number of said data traffics, Azizoglu teaches two data traffics and Meagher teaches four 'SONET/SDH' / OC-48 frames being multiplexed into one OC-192 frame.

Azizoglu is silent on a demapper / demultiplexer that detects a multi-frame / OC-192 frame from the SONET/SDH network and extracts the 'SONET/SDH' / OC-48 frames from the multi-frame / OC-192 frame.

Meagher teaches a demapper / demultiplexer that detects a multi-frame / OC-192 frame from the SONET/SDH network and extracts the 'SONET/SDH' / OC-48 frames from the multi-frame / OC-192 frame (demultiplexer that accepts the high-speed aggregate and de-interleaves, [0045])).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Azizoglu by incorporating the multiplexer/demultiplexer of Meagher within

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the Mux/Demux of Azizoglu. This modification can be performed according to the teachings of Meagher. The suggestion for the modification is to provide a time division multiplexer/demultiplexer that transmits low rate data using a high rate aggregate connection (Meagher: [0008]). This would benefit the system by allowing data to be transmitted at OC-192 as opposed to the slower OC-48 rate taught by Azizoglu.

Regarding claim 2, the mapper and demapper are constructed as a single unit (Azizoglu: fig. 2 box 26).

Regarding claim 3, the mapper inserts an identifier for identifying each of data traffics, into a head in each of the SONET/SDH frames (stream identifier in each transmitted packet (Azizoglu: col. 5 lines 18-21, separates packets belonging to different streams using address byte in packet headers, col. 6 lines 10-12)).

Regarding claim 4, the demapper identifies the data traffics, based on the identifier, for reproducing each of the data traffics (stream identifier to enable proper de-multiplexing (Azizoglu: fig. 4 box 64, separates packets

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belonging to different streams using the address byte, col. 6 lines 10-14).

Regarding claim 5, inserting error-monitoring data for monitoring a transmission error in each of data traffics, into a head in each of said SONET/SDH frames (Azizoglu: fig. 6 box 80, FEC encoder col. 6 lines 47-54). Regarding error-monitoring data placed in the head of the Sonet/SDH frame, the Sonet format calls for non-payload information being placed in the head of the frame (Newton: pg. 699-670, see figure on pg. 699).

Regarding claim 6, judging whether there is a transmission error in each of said data traffics, based on said error-monitoring data (Azizoglu: fig. 6 box 82, FEC decoder col. 6 lines 47-54).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Azizoglu and Meagher as applied to claim 5 above, and further in view of Bordogna (US 6,683,855).

Although the combination teaches error-monitoring data (Azizoglu: FEC encoder, FEC decoder, col. 6 lines 47-54), the

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combination is silent on error monitoring data is produced in accordance with BIP-8.

Bordogna teaches error monitoring data is produced in accordance with BIP-8 (FEC BIP-8, col. 11 lines 20-25).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Azizoglu and Meagher by using FEC BIP-8. This modification can be performed according to the teachings of Bordogna. This modification would benefit the system since BIP-8 is used often in the SONENT environment. Therefore, the system could be easily incorporated into larger systems.

Allowable Subject Matter

7. Claims 8 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald

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Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RU
Ronald Abelson
Examiner
Art Unit 2666

Ru Abelson
